DECLARATION

I, TAKAO OCHI, a Japanese Patent Attorney registered No. 10145, of Okabe International Patent Office at No. 602, Fuji Bldg., 2-3, Marunouchi 3-chome, Chiyoda-ku, Tokyo, Japan, hereby declare that I have a thorough knowledge of Japanese and English languages, and that the attached pages contain a correct translation into English of the priority documents of Japanese Patent Application No. 11-107791 filed on April 15, 1999 in the name of CANON KABUSHIKI KAISHA.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made, are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

signed this 11th day of January, 2007

Takao Ochi

PATENT OFFICE
JAPANESE GOVERNMENT

This is to certify that the annexed is a true copy of the following application as filed with this Office.

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Applicant(s): CANON KABUSHIKI KAISHA

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Commissioner,
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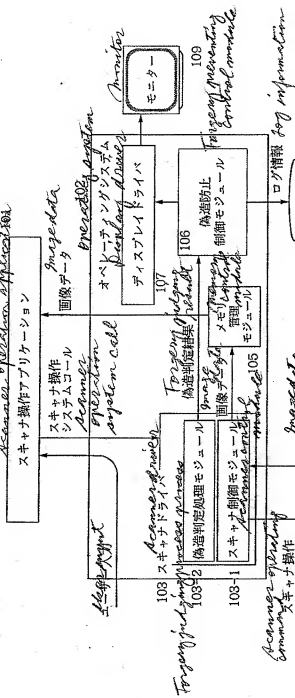
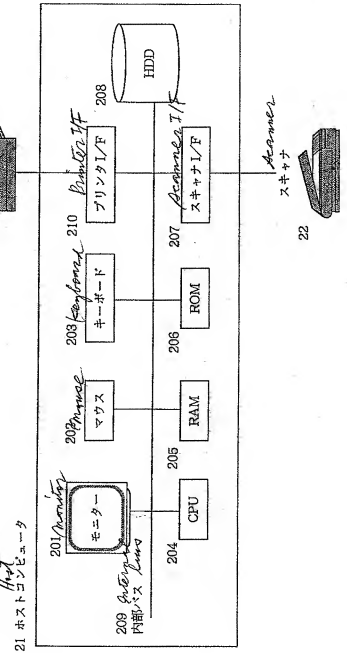
【書類名】　図面　[Name of the Document] Drawings

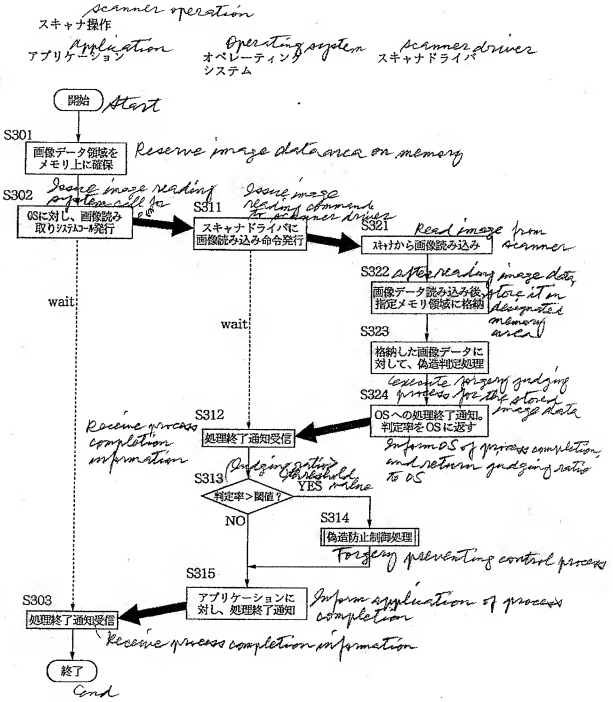
【図１】　Fig. 1



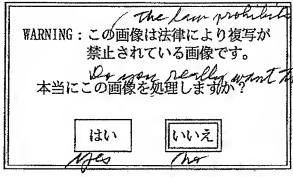
【図2】　Fig. 2


Printer
プリンタ
23
HDD
208
Printer I/F
プリンタI/F
210
Scanner I/F
スキャナI/F
207
Scanner
スキャナ
22
Keyboard
キーボード
203
ROM
206
Mouse
マウス
202
RAM
205
Monitor
モニター
201
CPU
204
Host
21 ホストコンピュータ
内部バス
209

【図３】 Fig. 3


scanner operation
スキャナ操作
Application
アプリケーション
Operating system
オペレーティングシステム
scanner driver
スキャナドライバ
開始
Start
S301
画像データ領域をメモリ上に確保
Reserve image data area on memory
S302
Issue image reading system call to OS
OSに対し、画像読み取りシステムコールを発行
S311
Issue image reading command to scanner driver
スキャナドライバに画像読み込み命令発行
S321
Read image from scanner
スキャナから画像読み込み
S322
After reading image data, store it in designated memory area
画像データ読み込み後、指定メモリ領域に格納
S323
格納した画像データに対して、偽造判定処理
S324
Execute forgery judging process to stored image data
S312
Receive process completion information
処理終了通知受信
OSへの処理終了通知。判定率をOSに返す
Inform OS of process completion, and return judging ratio to OS
S313
Judging whether threshold value is exceeded
判定率＞閾値？
YES
NO
S314
偽造防止制御処理
Forgery preventing control process
S315
Inform application of process completion
アプリケーションに対し、処理終了通知
S303
Receive process completion information
処理終了通知受信
終了
End
wait
wait

【図４】　Fig.4

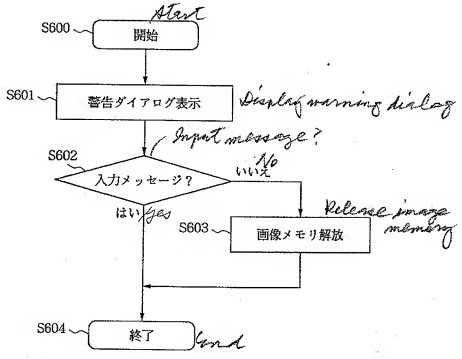

The law prohibits you to copy this image
WARNING：この画像は法律により複写が
禁止されている画像です。
Do you really want to process this image?
本当にこの画像を処理しますか？
はい
いいえ
Yes
No

【図5】 Fig.5

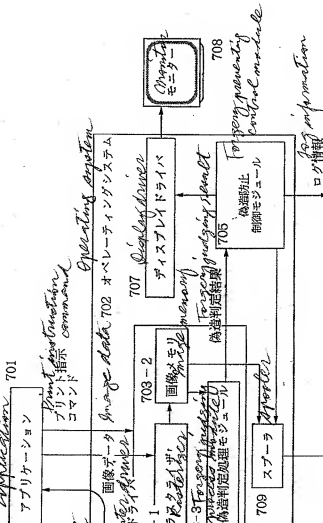
ログ情報 Log information

時間：Time	1998/12/24 10:00
ホストコンピュータ情報：Host computer information	
・メーカー名 manufacturer name	
・ホストID Host ID	
・OSバージョンOS version	
Image size	
画像サイズ：	2500×800
Judgement ratio	
判定率：	95%

【図６】 Fig. 6


Start
S600
開始
S601
警告ダイアログ表示
Display warning dialog
Input message?
S602
入力メッセージ？
No
いいえ
はい
yes
Release image memory
S603
画像メモリ解放
S604
終了
End

【図７】　Fig 7


Application
701
アプリケーション
Printer driver
プリンタドライバ
703
User input
ユーザー入力
Printer driver
プリンタドライバ
703－1
ラスタライザ
703－2
画像メモリ
703－3
偽造判定処理モジュール
Forgery judgment module
Rasterizer
Image data
画像データ
Printer command
プリンタ指示コマンド
Operating system
オペレーティングシステム
702
Display driver
707
ディスプレイドライバ
Display
モニター
708
Forgery judgment control module
偽造判定制御モジュール
Forgery judgment module
偽造判定処理モジュール
705
Forgery judgment result
偽造判定結果
709
スプーラ
Spooler
Printer
704
プリンタ
Log information
ログ情報
HDD
706

Applicant's Information

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11-107791

[Name of the Document] Specification

[Title of the Invention] Image Processing Method, Printer Driver, Operating System, And Memory Medium

[What is Claimed is]

[Claim 1]

A printer driver which receives an instruction for a printing process, judges whether an image corresponding to an image signal developed represents a specified image in response to the instruction for the printing process, and outputs a result of the judgment so as to use the result in a process of the image signal.

[Claim 2]

A printer driver according to claim 1, wherein a forgery preventing module in an operating system outputs an instruction for executing a predetermined display to a display driver according to the result of the judgment.

[Claim 3]

A printer driver according to claim 1, wherein a forgery preventing module in an operating system outputs an instruction for terminating a spooling operation according to the result of the judgment.

[Claim 4]

A printer driver according to claim 1, wherein the judgment is executed using template matching.

[Claim 5]

A printer driver according to claim 2, wherein the predetermined display indicates that the image is an image of which reproduction is inhibited.

[Claim 6]

A printer driver according to claim 5, wherein when an instruction for printing is issued after the display, log information is stored in memory means.

[Claim 7]

A printer driver according to claim 1, wherein the judgment is executed for an image corresponding to the image signal and plural specific images.

[Claim 8]

A printer driver according to claim 1, wherein the judgment is executed with an image signal obtained by spatial thinning of the image signal.

[Claim 9]

A printer driver according to claim 1, wherein the judgment is executed with an image signal obtained by reducing the number of bits of the image signal.

[Claim 10]

A printer driver according to claim 1, wherein the judgment is terminated when there is obtained a high judgment rate indicating that the image corresponding to the obtained image signal is a specific image.

[Claim 11]

A printer driver according to claim 1, wherein, if the result of the judgment with the image signal obtained

by spatial thinning of the image signal indicates a high probability of a specific image, the judgment is executed with the image signal without thinning.

[Claim 12]

A printer driver according to claim 10, wherein the judgment with the unthinned image signal is executed with only the image signal of an area containing an object of judgment in the thinned image signal.

[Claim 13]

A printer driver according to claim 1, wherein first and second judgments are provided for a same specific image, and the second judgment is executed when a high judgment rate is obtained in the first judgment.

[Claim 14]

A computer readable memory medium which stored codes for executing the processing according to claims 1 to 13.

[Claim 15]

An operating system which obtains a result of a judgment whether an image corresponding to an image signal obtainedaccordingtoaprintinstructionrepresentsaspecific image, and outputs a signal for executing a process according the obtained result of the judgment.

[Claim 16]

An operating system according to claim 13, wherein the judgment is executed in a printer driver.

[Claim 17]

An operating system according to claim 15, wherein

the process is a process for terminating the printing of the image corresponding to the image signal.

[Claim 18]

An operating system according to claim 15, wherein the process is a process for displaying that the image is a specified image.

[Claim 19]

A driver which outputs an image signal generating command to an input device, judges whether an image corresponding to the image signal obtained from the input device in response to the command represents a specified image, and outputs a signal for causing a display unit to display a result of the judgment.

[Claim 20]

An driver according to claim 19, wherein the input device is a digital camera, a digital camcorder, a scanner, a compact disk, a mini disk, or a DVD.

[Claim 21]

An operating system which judges whether an image corresponding to an image signal represents a specific image, and adds information indicating that the image is the specific image, to the image signal when the image judged as the specific image is stored, if the judgment judges that the image is the specified image.

[Claim 22]

A method according to claim 22, wherein the added information can be recognized by a printer driver or a printer.

[Claim 23]

A method according to claim 21, wherein the added information is also copied when the image data is copied to a memory medium.

[Claim 24]

A method according to claim 21, wherein the added information is added as a digital watermark to the image signal.

[Claim 25]

An image processing method which executes a processing according to claims 1 to 13.

[Claim 26]

A printer which executes a processing according to claims 1 to 13.

[Detailed Description of the Invention]

[0001]

[Field of the Industrial Utilization]

The present invention relates to an image processing method, a printer driver, an operating system and a memory medium.

[0002]

[Prior Art]

As a result of recent improvement in the performance of the color image reading device utilizing CCD or the like (such device being hereinafter called color scanner) and of the color printer, there is increasing danger of forging or unlawful reproduction of an original of which reproduction

is forbidden, such as a banknote or a valuable security document, by reading such original by the color scanner as the image data and printing such image data by the color printer. In order to prevent such forging, the color copying apparatus consisting of a color scanner and a color printer often incorporates a forgery preventing device which inhibits the copying operation by recognizing the original of which reproduction is forbidden.

[0003]

[Problems to be Solved by the Invention]

However, the forgery preventing device employed in the color copying apparatus functions only in the copying operation, and, if the original forbidden for reproduction is once read by a color scanner, the obtained data can be outputted by a color copying apparatus or another color printer through a controller, so that the original is eventually forged.

[0004]

In consideration of the foregoing, an object of the present invention is to provide a configuration capable of suppressing the forgery operation for the image input from a color scanner or the image output to a color printer.

[0005]

[Means for Solving the Problems]

The above-mentioned object can be attained, according to the present invention, by a printer driver capable of receiving an instruction for the printing process (in the

present embodiment, corresponding to a print instruction command in Fig 7), discriminating whether an image developed by a rasterizer represented a specified (specific) image in response to the instruction for the printing process (corresponding to a forgery judging process module in the same drawing), and outputting the result of the discrimination for use in processing the signal of the image.

[0006]

[Description of the Preferred Embodiments]

(First Embodiment)

Fig. 1 is a view showing the configuration of a scanner system including a host computer and constituting a first embodiment of the present invention. On the host computer, there functions an operating system 102 (hereinafter written as OS), and a scanner operating application 101 functioning thereon provides an operating environment for example for an image reading operation of a scanner 104.

[0007]

The scanner system shown in Fig. 1 is realized by a hardware configuration shown in Fig. 2.

Referring to Fig. 2 the scanner system is composed of a host computer 21 and a scanner 22. The host computer 21 is provided with a monitor 201 for displaying GUI of the application 101 and the result of image reading from the scanner; a mouse 202 and a keyboard 203 for transmitting the input by the user to the application 101 and the OS 102; an HDD 208 for storing various programs and image data;

a ROM 206 for storing the basic program of the host computer; a RAM 205 for storing read programs and images; and a scanner I/F 207 for controlling the scanner 122, which are mutually connected by an internal bus 209 and controlled by a CPU 204. On the host computer 121 of the above-described configuration, the OS 102 and the scanner operating application 101 are realized by the execution, by the CPU 204, of the program read from the HDD 208 to the RAM 205.

[0008]

In the following there will be explained the internal structure of the OS 102 within an extent necessary for explaining the first embodiment. In most OS, like UNIX, there are separately realized a device driver for interfacing with the hardware such as the scanner, and a module for managing other user applications and the ememory. The present embodiment will be explained in the following by an OS having such separate structure.

[0009]

The OS 102 is provided, as a module for controlling the scanner in addition to controlling the user input and other hardware devices, with a scanner driver 103, which, in the present embodiment, is provided with a scanner control module 103-1 for directly controlling the scanner 104 and a forgery judging module 103-2 for judging whether the image fetched from the scanner is prohibited for reproduction. The OS is further provided with a memory management module 105 for managing the image data area.

[0010]

The scanner operating application 101 is composed for example of a GUI routine for interfacing with the user, a routine for interpreting the user input received through the OS 102 and issuing a command for operating the scanner, a routine for displaying the image read from the scanner, a routine for storing the read image on the HDD etc.

[0011]

The scanner 104 scans and electronically reads an original, placed on an original table, by a CCD line sensor according to a scanner operation signal from the scanner driver 103, and sends an image signal to the host computer according to a predetermined interface rule. The image signal is divided into plural color components, for example R, G and B, each being multi-value data of 8 to 12 bits.

[0012]

In the following there will be explained in detail the function of the present embodiment of the above-described configuration, with reference to the attached drawings. Fig. 3 shows an example of the operation sequence of the scanner system, on the modules of scanner operating application 101, OS 102 and scanner driver 103.

[0013]

When the user instructs a scan start operation through the scanner operating application 101 by a manual operation with the mouse 202 or the keyboard 203 on the GUI (graphical user interface), the scanner initiates the image reading.

When the scanner operating application starts the reading operation, the application secures, on the RAM, an area for the designated image to be read in a step S301, then issues an image reading command specifying the scanner to the OS in a step S302, and then enters a waiting state until an image reading end notice is received in a step S303.

[0014]

In response to the scan start command, the OS 102 calls, in a step S311, a scanner driver module corresponding to the specified scanner, then issues a command for image reading from the scanner, and enters a waiting state until the process of the scanner driver 103 is terminated. In this operation, the forgery preventing module of the OS prepares, as a variable, a judgment rate representing whether the image data are of an original forbidden for reproduction.

[0015]

In response to the scan start command from the OS 102, the scanner control module 103-1 in the scanner driver provides, in a step S321, the scanner with a scan start command specific to such scanner. In a step S322, after image reading, the image signal received from the scanner is stored in the image data area secured by the application, and the sequence is transferred to the forgery judgment module 103-2.

[0016]

The forgery judgment module 103-2 is provided, as a template, with a reproduction forbidden pattern on a memory

(RAM or ROM) separate from the image memory. A step S323 executes pattern matching between the stored image data and the template, and outputs a judgment rate of a value between 0 and 100. An example of such pattern matching consists of calculating the mutual correlation between the image data and the template for each color component and outputting the maximum value, but the method of such pattern matching is not particularly restricted. Also the template for the reproduction forbidden pattern may be provided in plural units, and, in such case, the pattern matching is conducted between the image data and the plural patterns and the obtained maximum value can be outputted. In the foregoing, the forgery preventing module has been explained as a software module, but it may also be realized by a hardware for faster processing. Also in case of the process with the software module, the process time can be shortened for example by (1) preparing a spatially skipped image data from the aforementioned image data and executing template matching in the above-mentioned forgery judgment module between such image data and the reproduction forbidden pattern (pattern prohibited for reproduction, corresponding to the image data after skipping), or (2) reducing the number of bits of the stored image data and executing template matching by the above-mentioned forgery judgment module with the reproduction forbidden pattern (pattern prohibited for reproduction, corresponding to the image data after bit number reduction).

[0017]

After the image data reading and the forgery judging process, the scanner driver informs the OS of the end of process and returns the judgment rate thereto.

[0018]

The OS receives the notice for the end of process from the scanner driver in a step S312, and discriminates, in a step S313, whether the image data are of an image forbidden for reproduction by an actual forgery judgment process. If the judgment rate is larger than a threshold value set in advance by the OS, the image data are regarded to have possibility as an image forbidden for reproduction, and the sequence proceeds to a step S314 for forgery preventing control.

[0019]

Fig. 6 is a view showing an example of the process flow of the forgery preventing process S314. A step S601 starts the process and a step S601 displays a user input image as shown in Fig. 4 on a monitor 109 through a display driver 107. In this manner, in case the image entered from the scanner has the probability that it is prohibited for reproduction, the display asks the user whether he really wants to read the image. A step S602 checks whether the user input is "yes" or "no", and, in case of "yes" (in case of image reading), an operation history as shown in Fig. 5 is stored in the HDD 108. In case of "no" (if image reading is canceled), a step S603 releases the memory storing the

image, thereby prohibiting the image reading.

[0020]

After the above-described process, a step S315 sends a notice for the end of process to the application, whereby the image reading operation of the scanner system is terminated.

[0021]

In the present embodiment, as explained in the foregoing, at the acquisition of the image signal by the scanner, there is judged the similarity between the image signal and the specified image (corresponding to a valuable security document such as banknote) and the result of judgment can be informed to the operator.

[0022]

Consequently, in case the image prohibited for reproduction is read just for a mischievous fun of the operator, an alarm can be given to the operator.

[0023]

However, in case the image reading is executed even after the above-mentioned warning is given, the prevention of the forging action is not sufficient by recording the history as explained above.

[0024]

Therefore, in the present embodiment, the forgery preventing module 106 has a configuration capable, in case of storing the image data, obtained by reading the reproduction prohibited image judged by the above-described judgment, in the HDD 208 of the host computer 121, of adding information

indicating that the image data represent an image which is prohibited for reproduction.

[0025]

Also the printer driver or the printing device is given a function of judging such added information and executes a forgery preventing process such as blacking out the formed image, whereby the forging action can be prevented.

[0026]

Also the added information can be securely added to the image data by adopting such an image data recording format that the added information is not removed even in case the image data are copied an external memory medium (such as a floppy disk, an optical disk, a mini disk, an MO etc.). Such secure addition to the image data can be achieved by adding the information as an digital watermark to the image data.

[0027]

Therefore, for example in a sequence consisting of a scanner, then a host computer and a printer, the above-mentioned judgment is executed in the most upstream timing of scanning the image signal, thereby securely preventing the acquisition of the image signal corresponding to the image which is prohibited for reproduction, in a system consisting of a scanner for image data acquisition, a host computer (editing apparatus) for editing process and a printer for image formation. Also there can be achieved high-speed and accurate judgment.

[0028]

Also the printing of the image signal, corresponding to the image prohibited for reproduction, can be securely prevented, even in case a printer not supporting the function of judging the specified image is connected, by providing the scanner driver or the OS with such function of judging the specified image.

[0029]

(Second embodiment)

Fig. 7 shows the configuration of a second embodiment of the present invention, which executes forgery prevention by a printer driver 703 and an OS 702 in an image processing system consisting of a host computer and a printer. As in the first embodiment, on the host computer, there functions an operating system 702 (CS), and an application 701 functioning thereon provides an operating environment such as an image output operation to a printer 704.

[0030]

Also as in the scanner system shown in Fig. 1, the printer system shown in Fig. 7 is realized by a hardware configuration shown in Fig. 2. Referring to Fig. 7, the printer system is composed of a host computer 21 and a printer 23. The host computer 21 is provided with a monitor 201 for displaying GUI of the application 701 and the result of image reading from the scanner; a mouse 202 and a keyboard 203 for transmitting the input by the user to the application and the OS; an HDD 208 for storing various programs and

image data; a ROM 206 for storing the basic program of the host computer; a RAM 205 for storing read programs and images; and a printer I/F 210 for controlling the printer 123, which are mutually connected by an internal bus 209 and controlled by a CPU 204.

[0031]

On the host computer 121 of the above-described configuration, the OS and the application are realized by the execution, by the CPU 204, of the program read from the HDD 208 to the RAM 205. The OS 702 is provided, as a module for controlling the printer in addition to controlling the user input and other hardware devices, with a printer driver 703, which, in the present embodiment, is provided with a rasterizer 703-1 for generating image data suitable for the printer 704, an image memory 703-2 for storing the generated image data, and a forgery judging module 703-3 for judging whether the rasterized image is prohibited for reproduction. The result of forgery judgment, outputted from the forgery judging module, is transferred to a forgery prevention control module 705, which in response executes a process for preventing or suppressing the forging action.

[0032]

The OS 702 is also provided with a print spooler 709 for executing control for outputting the rasterized image to the printer. In the foregoing, the rasterizer, image memory and forgery judging module are supposed to be executed by the printer driver, namely realized by a

software process, but these may be also executed in the printer 704. In such case, the result of forgery judgment executedintheprintermaybereturnedtotheforgeryprevention control module 705.

[0033]

In the following there will be explained the flow of the forgery preventing process in the present embodiment.

[0034]

In response to a print start command entered by a manual operation with the mouse 202 or the keyboard 203 on the GUI (graphical user interface) displayed on the monitor 708, the OS 702 instructs the printer driver 703 to print the data received from the application 701. In response to the print instruction, the printer driver 703 causes the rasterizer 703-2 to develop the document to be printed as image data and stores the image data in the image memory 703-2. The stored image is transferred to the forgery judging module 703-2 and the print spooler 709, which respectively start the forgery judging process and the printing process. The forgery judging module judges, as in the first embodiment, whether the image to be printed includes a pattern prohibited for reproduction, and sends the judgment rate to the forgery prevention control module 705, which compares the threshold value set in advance by the OS with the judgment rate, and, if the latter is larger, display an alarming dialog as shown in Fig. 4 on the monitor 708. If the user decides not to execute printing in response to the displayed dialog, a

spooling interruption command is supplied to the printer spooler 704 to terminate the printing process. In case the user decides to execute printing in response to the displayed dialog, an operation history information as shown in Fig. 5 is stored in 706 whereupon the printing process is terminated.

[0035]

For a high judgment rate, the forgery preventing module may display interruption of printing on the monitor 708 and issue a spooling interruption command to the printer spooler 704, instead of alarm display.

[0036]

In the present embodiment there has been explained a configuration in which the host computer and the printer are connected in a one-to-one relationship, but the forgery judgment may also be executed by the OS including the printer driver, in a configuration where plural host computers are connected to a printer through a network.

[0037]

The forgery judging configuration adopted in the printer allows to judge the forgery in the same manner as in the OS.

[0038]

However, the network printer is occupied during thejudgmentoftheimagedatarepresentingtheimageprohibited for reproduction, and such situation is undesirable for the operators of other host computers.

[0039]

On the other hand, the forgery judgment executed in the OS is effective in preventing unnecessary occupation of the printer.

[0040]

Also the forgery judgment in the OS realizes secure prohibition of reproduction even in case of employing a printer not supporting the function of judging the image prohibited for reproduction.

[0041]

(Other Embodiments)

In the foregoing embodiments there has not been explained the number of templates, but it is also possible, in these embodiments, to prepare plural templates corresponding to the valuable security documents of plural kinds, thereby judging such documents of plural kinds.

[0042]

Also as an alternative method for avoiding the above-mentioned drawback that the judgment becomes impossible in case of a scanner (or printer) driver not supporting the judgment of the specified image in the foregoing embodiments, it is also possible to refer to the version information of the scanner (or printer) driver by the OS, and, if the scanner (or printer) driver is identified as not supporting the judgment of the specified image, to display an operation image on the monitor 201 for requesting the user to download a scanner (or printer) driver supporting the judgment of

the specified image through a network (for example Internet).

[0043]

The scanner (or printer) driver supporting the judgment of the specified image can be downloaded by a manual instruction of the user in response to such operation image.

[0044]

Also in the foregoing embodiment, there is adopted the template matching on the image signal after spatial pixel skipping or after reduction of the number of pixels, in order to reduce the judgment process time.

[0045]

As an alternative method of increasing the speed of judgment process, there can be adopted a configuration of preparing a template for a part of the specified image (for example a watermark portion, a number portion or a stamp portion in case of a Japanese banknote) and transmitting the high judgment rate to the OS at a timing when such part of the specified image is judged, whereby the judgment can be completed without judging the entire image signal corresponding to the specified image but executing the judgment only on the above-mentioned part.

[0046]

Thus the time required for judgment can be shortened despite of the judgment process executed by a software process.

[0047]

Also an even faster judgment process is possible by employing the image signal subjected to spatial pixel

skipping or reduction in the number of pixels as in the foregoing embodiment and adopting the above-mentioned configuration of utilizing the template corresponding to a part of the specified image and outputting the high judgment rate at the completion of judgment of the above-mentioned part, instead of executing judgment on the entire image signal corresponding to the specified image.

[0048]

Furthermore, as the probability of finding the specified image among the scanned images is generally low in most cases, it is possible to execute the approximate judgment with such high-speed method, and, if the judgment rate is high in such approximate judgment, to read the image signal without skipping from RAM in an image portion corresponding to the template in the above-mentioned approximate judgment and to execute the fine judgment with a separate template without data skipping prepared for the fine judgment, thereby achieving high-speed judgment and obtaining secure result for the image which is doubted as a specified image.

[0049]

Also, the accuracy of judgment of the specified image may be deteriorated if a part thereof is employed as the template for judging such specified image.

[0050]

It is therefore possible to prepare a template corresponding to a portion of the specified image and another

template corresponding to another portion of the specified image, and, if the judgment rate is high in the judgment employing the former template corresponding to a portion of the specified image, to execute the judgment with the another template (time-shared judgment) and to destroy the image data only if the judgment rates exceed the threshold values in both templates, thereby reducing the probability of erroneous judgment and realizing highly accurate judgment.

[0051]

The foregoing embodiments have been explained by flow charts indicating the process sequence, but the present invention naturally includes also a computer readable memory medium capable of generating in succession codes corresponding to such process sequence.

[0052]

Also the foregoing embodiments have been explained by a configuration of obtaining the image signal from the scanner.

[0053]

However the present invention is naturally effective also in case of acquiring image signal from various input or reproduction devices such as digital camera, digital camcorder, compact disk, mini disk, DVD, film scanner etc., for executing judgment by the driver and OS of such input or reproduction device as to whether such image signal belongs to a valuable security document.

[0054]

[Technical Advantages of the Invention]

As explained in the foregoing, there can be provided the function of judging the specified image, even if the printer does not support the judgment of the specified image.

[0055]

Also there can be provided the function of judging the specified image, corresponding to various input devices.

[0056]

Also there is provided an operating system capable of acquiring the result of judgment indicating whether the image corresponding to the image signal obtained by a print instruction represents the specified image and outputting a signal for executing a process according to thus acquired result of judgment, whereby the process in the operating system can be securely based on the result of judgment of the specified image.

[0057]

Also the foregoing embodiment is adapted to send an image signal generation command to an input device, to judge whether the image corresponding to the image signal obtained from the input device in response to the above-mentioned command represents a specified image, and to output a signal for displaying the result of the judgment on the display unit, whereby the operator can be informed of the result of the judgment whether the image corresponding to the image signal represents a specified image.

[0058]

Also the foregoing embodiment is adapted to judge whether the image corresponding to the image signal represents a specified image, and, if the judgment identifies that the above-mentioned image is a specified image, to add information indicating that the above-mentioned image is a specified image, in storing thus judged image data, so that the information can be added at the storage of thus judged image. Such information can be added also at the storage of the judged image in a memory medium.

[Brief Description of the Drawings]

[Figure 1]

A view showing the configuration of a scanner system including a host computer.

[Figure 2]

A view showing an example of the configuration of first and second embodiments.

[Figure 3]

A flow chart showing the function of the first embodiment.

[Figure 4]

A view showing an example of the image of enquiry to the user in response to an image input forbidden for copying.

[Figure 5]

A view showing an example of the history of operation on an image input forbidden for copying.

[Figure 6]

A flow chart showing the sequence of a forgery preventing process.

[Figure 7]

A view showing the configuration of a printer system.

[Name of the Document] Abstract

[Abstract]

[Object]

An object of the present invention is to provide a configuration capable of suppressing the forgery operation.

[Means for Achieving the Object]

An instruction for the printing process is received (in the present embodiment, corresponding to a print instruction command in Fig 7), whether an image developed by a rasterizer represented a specified (specific) image is discriminated in response to the instruction for the printing process (corresponding to a forgery judging process module in the same drawing), and the result of the discrimination is output for use in processing the signal of the image (corresponding to an output of a forgery judging result in the same drawing).

[Elected Drawing]

Figure 7